

Application No. 09/155,635
 Amendment dated August 16, 2006
 Response to Notice dated July 25, 2006

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Docket No.: 48899CPA2(71360)

AMENDMENTS TO THE CLAIMS

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This listing of claims will replace all prior versions and listings of claims in the application:

1. – 8. (Cancelled)

9. (Currently amended) A lithium ion secondary battery comprising a positive electrode, a non-aqueous electrolyte, a separator, and a negative electrode comprising a carbon material capable of charging and discharging lithium ions;

wherein said carbon material comprising an amorphous carbon-coated graphitic carbonaceous material is prepared by coating the particle surfaces of a graphite material with a carbonizable organic material, calcining and pulverizing the coated graphite material;

and wherein said graphite material which forms the core of a coated material, satisfies the following conditions (a) and (b):

(a) when the BET specific surface area of the graphite material is represented by y (m^2/g) and the particle size by x (μm), the graphite material satisfies the following formula (I):

$$y \leq Cx^{-0.6} \quad (C=52 \text{ m}^2/(\text{g} \cdot \mu\text{m}^{-0.6}), 4 \leq x \leq 40, 4.9 \leq y \leq 25) \quad (I);$$

(b) in Raman spectroscopic analysis using argon ion laser light with a wavelength of 5,145 Å, the ratio of the strength of the peak existing in the region of 1,350-1,370 cm^{-1} (IB) to the strength of the peak existing in the region of 1,570-1,620 cm^{-1} (IA), which is represented by an R value (IB/IA), is 0.001 to 0.2.

10 (Currently amended) A lithium ion secondary battery according to Claim 9, wherein the graphite material satisfies the following condition (c):

(c) in Raman spectroscopic analysis using argon ion laser light with a wavelength of 5,145 Å, the half-value width of the peak existing at 1,570-1,620 cm^{-1} , which is represented by a $\Delta\nu$ value, is 14 to 22.

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11. (Previously presented) A lithium ion secondary battery according to claim 9, wherein the R value (IB/IA) is 0.001 to 0.15.

12. (Previously presented) A lithium ion secondary battery according to claim 9, wherein the R value (IB/IA) is 0.001 to 0.11.

13. (New) A process for producing an amorphous carbon-coated graphitic carbonaceous material for use as a negative electrode in a lithium ion secondary battery, the process comprising coating the particle surfaces of a graphite material with a carbonizable organic material, calcining the coated graphitic material and pulverizing the calcined material;

wherein the graphite material satisfies the following conditions (a) and (b):

(a) when the BET specific surface area of the graphite material is represented by y (m^2/g) and the particle size by x (μm), the graphite material satisfies the following formula (I):

$$y \leq Cx^{-0.6} \quad (C=52 \text{ m}^2/(\text{g} \cdot \mu\text{m}^{-0.6}), 4 \leq x \leq 40, 4.9 \leq y \leq 25) \quad (I);$$

(b) In Raman spectroscopic analysis using argon ion laser light with a wavelength of 5,145 Å, the ratio of the strength of the peak existing in the region of 1,350-1,370 cm^{-1} (IB) to the strength of the peak existing in the region of 1,570-1,620 cm^{-1} (IA), which is represented by an R value (IB/IA), is 0.001 to 0.2.

14. (New) The process according to claim 13, wherein the graphite material further satisfies the following condition (c);

(c) in Raman spectroscopic analysis using argon ion laser light with a wavelength of 5,145 Å, the half-value width of the peak existing at 1,570 to 1,620 cm^{-1} , which is represented by a $\Delta\nu$ value, is 14 to 22.

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15. (New) The process according to claim 13, wherein the R value (IB/IA), is 0.001 to 0.15.

16. (New) The process according to claim 13, wherein the R value (IB/IA), is 0.001 to 0.11.